

REMARKS

Claims 9, 11-13, 37 and 40-44 are pending in the application.
Reconsideration of this application is respectfully requested.

The Office Action rejects claims 9, 11-13, 37 and 40-44 under 35 U.S.C 103(a) as unpatentable over U.S. Patent No. 6,665,036 to Oh et al., hereafter Oh, in view of U.S. Patent No. 6,111,627 to Kim et al., hereafter Kim, U.S. Patent No. 5,995,186 to Hiroshi, hereafter Hiroshi, and U.S. Patent No. 6,061,114 to Callegari et al., hereafter Callegari.

The Examiner admits that Oh does not disclose the following recitations of finally rejected independent claim 9:

“wherein said dry deposited layers are exposed to at least a first particle beam treatment and a second particle beam treatment;

wherein a direction of said first particle beam treatment with respect to said dry deposited layers is different than a direction of said second particle beam treatment with respect to said dry deposited layers”.

The Examiner contends at pages 2, 7 and 8 of the Office Action that there is no disclosure in the application showing “two different particles or ions (not single particle or ion) using in the first and second particle beam treatments to align the first and second domains”. However, independent claims 9 and 37 and their dependent claims do not recite “two different particles or ions”. Therefore, it is respectfully submitted that the Examiner’s contention is irrelevant to the claims.

Applicants’ illustrated embodiment uses one particle beam source to provide a plurality of particle beam treatments to an alignment layer. Independent claims 9 and 37 recite that first and second dry deposited layers “are exposed to at least a first particle beam treatment and a second particle

beam treatment". In the illustrated embodiment, the first particle beam treatment provides alignment in a first direction and the second particle beam provides alignment in a second direction that is different than the first direction.

In claim interpretation, weight must be given to the combination of recited features. The Examiner cannot ignore the recited combination of "at least a first particle beam treatment and a second particle beam treatment".

The Examiner further contends at page 7, that Callegari "discloses first particle beam treatment and second particle beam treatment (column 5, lines 20-26 and 58-63)". However, these citations describe a deposition of alignment films 706 and 708 (Fig. 7) using deposition machine 810 (Fig. 8). Deposition machine 810 is not described as using an ion beam source or doing an alignment of films 706 or 708. Therefore, the Examiner's contention is erroneous.

With respect to dependent claims 11 and 40, the Examiner notes that "each of the multi-domain, dry deposited layers is obtained by a mechanical mask 966; said dry deposited layers are exposed to at least a first particle beam treatment use the same ion" (page 5, paragraph d, of the Office Action). As a matter of clarification, Calligari's layers 706 and 708 are obtained by a deposition using deposition machine 810 of Fig. 8 and not the ion beam apparatus of Fig. 9. Calligari's mask 966 is described at column 6, lines 46-48 as:

"Atomic beam-device 948 may further include a mask 966 covering the surrounding of substrate 920."

Calligari's mask 966 covers the surrounding of substrate 920 and not any part of alignment layers (e.g., layers 706 and 708 of Fig. 7). Thus, Calligari's mask 966 does not play any role in the alignment of layers 706 and 708.

With respect to dependent claims 41 and 43, the Office Action does not cite any support for the claimed subject matter. In fact, Callegari does not disclose or teach the recited subject matter, which is set forth below:

“wherein said first particle beam treatment aligns first and second ones of the domains of at least one of said pixels in a first direction, and wherein said second particle beam treatment aligns said first domain in a second direction”.

With respect to dependent claims 42 and 44, the Examiner cites column 6, lines 19-31. This citation refers to the use of a mask in general terms, but does not disclose or teach using a mask in the manner recited in claims 42 and 44.

For the reasons set forth above, independent claims 9 and 37 and dependent claims 11-13 and 40-44 are unobvious over the combination of Oh, Kim, Hiroshi and Callegari.

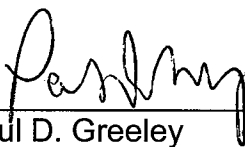
The Office Action provides no motivation for one skilled in the art combine Oh with Kim, Hiroshi and Callegari. In fact this suggested combination is improperly based on the hindsight of Applicants' disclosure. Such hindsight reconstruction of the art cannot be the basis of a rejection under 35 U.S.C. 103. The prior art itself must suggest that modification or provide the reason or motivation for making such modification. In re Laskowski, 871 F.2d 115, 117, 10 USPQ 2d 1397, 1398-1399 (CAFC, 1989). “The invention must be viewed not after the blueprint has been drawn by the inventor, but as it would have been perceived in the state of the art that existed at the time the invention was made.” Sensonics Inc. v. Aerosonic Corp. 38 USPQ 2d 1551, 1554 (CAFC, 1996), citing Interconnect Planning Corp. v. Feil, 774 F. 2d 1132, 1138, 227 USPQ 543, 547 (CAFC, 1985).

For the reasons set forth above, it is submitted that the rejection of claims 9, 11-13, 37 and 40-44 under 35 U.S.C. 103(a) is erroneous and should be withdrawn.

It is respectfully requested for the reasons set forth above that the rejection under 35 U.S.C. 103(a) be withdrawn, that claims 9, 11-13, 37 and 40-44 be allowed and that this application be passed to issue.

Respectfully Submitted,

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